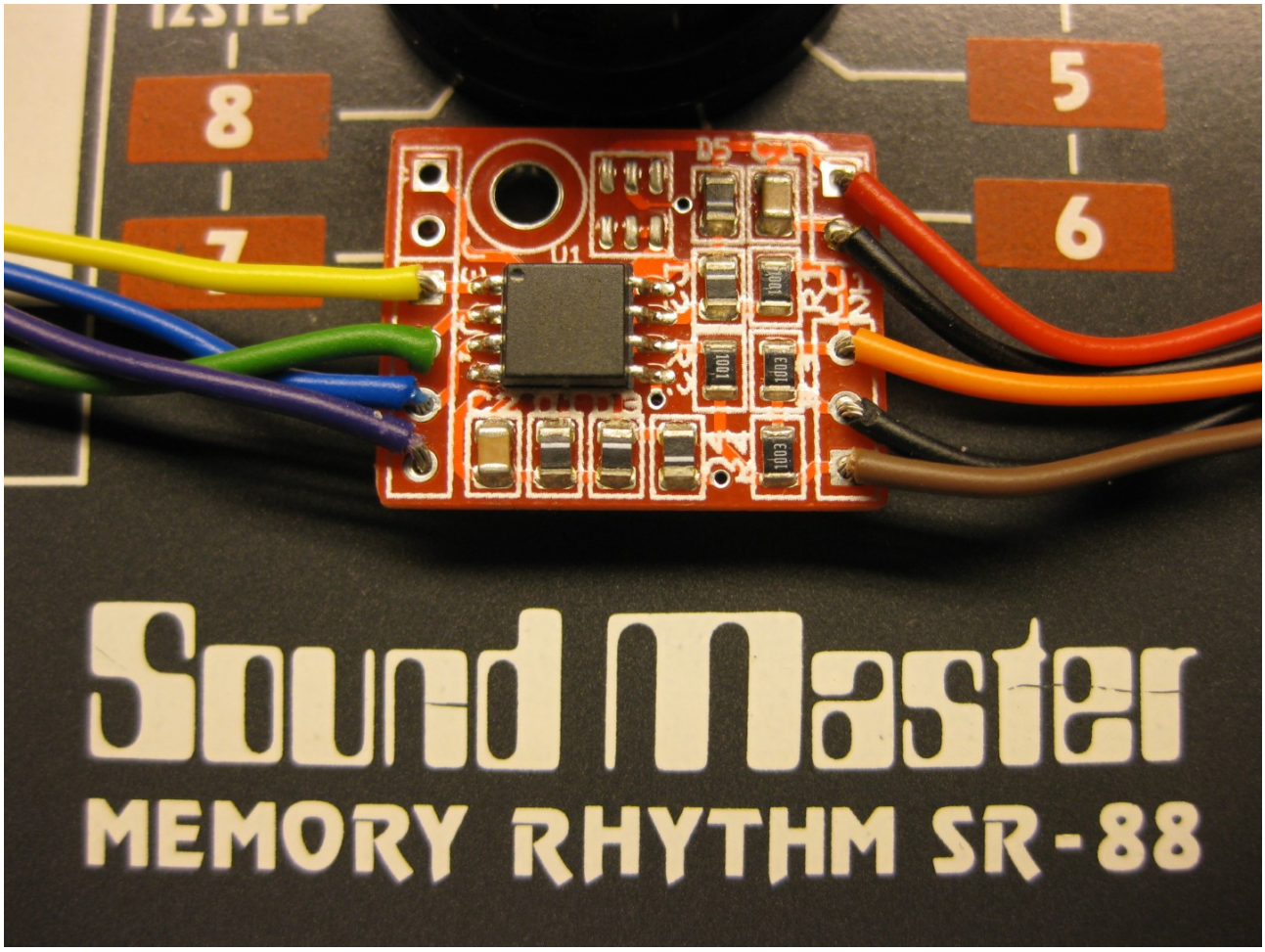
Sound Master Memory Rhythm SR-88

Artefacts µSync installation guide
version 1.0 February 2024



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Introduction

The Sound Master Memory Rhythm SR-88 has no din sync input and can not be synced in any other way. Artefacts developed a piece of hardware to convert a standard 24ppqn DIN sync signal to the needed clock, start and stop signals to get the SR-88 running in sync. If no sync signal is present the SR-88 uses it's internal clock and start/stop circuitry. The µSync switches to the DIN Sync input as soon as a master start is detected on the DIN sync input. So no need for a switch to switch between internal and external clock. The current consumption is only 1,5mA. On the Artefacts website you can find info on which drum machines can be fitted wit a µSync. Artefacts can install the kit into your Sound Master, contact us for details. This kit does not work with midi!

Before you start

Before you buy and install this kit make sure you have the needed skills and tools to perform this modification and the SR-88 is fully functional. Although it is a simple modification it is important to read and follow the instructions. **!!!!! When you use an external power supply make sure the output voltage is not higher than 6.2Volt. The SR-88 might work with a higher voltage but the uSync kit can not handle voltages higher than 6.2Volt!!!!**

Skills you need:

- basic metal working skills
- basic soldering skills

Tools you need:

- hand held drill or drill press
- drill bit 3mm and 6mm
- center punch
- Digital multi meter(DMM)
- soldering iron
- solder wick, de-soldering pump or de-soldering iron
- heat gun
- solder wire
- screwdriver philips #1 and pozidriv #1
- a tool to tighten the knurled nut of a mini-jack
- knife or precision drill with a cutting tool.
- transparent tape

If you choose to fit 5 way din plug instead of a mini jack you also need a step drill bit including 16mm step or several drill bits in 3mm increments up to 15,5mm or 16mm.

Opening the SR-88

If you have some patterns that are very important to keep, write them down before installing the µSync. Removing and disconnecting the batteries from the unit makes it easier to install the kit and you might loose your patterns. Open the SR-88 by removing the four screws on the side of the SR-88 that holds the bottom. Remove the bottom and the batteries.

DIN sync input options.

The standard kit uses a stereo mini jack which can be fitted inside the battery compartment. You need an extra converter cable from mini jack to din, this is included in the standard kit. It is also possible to fit a DIN socket but it is really near the edge of the PCB and the side of the metal case. You need to drill the hole for the DIN socket in exactly the right position or the DIN socket will not fit. This option is not be shown in this instruction manual.
A lot of modern sequencers have a mini jack output for the din sync signals. You can connect the SR-88 directly with a stereo mini jack cable to for example a Arturia Beatstep or Keystep Pro.
If you don't want to drill a hole in the case you can also use one of the mini jack outputs. To do so you need to remove the pcb from the housing. If you choose to use the SQ output make sure you short the points where the wires are connected to the jack otherwise the cymbal will not trigger. This option is not shown in this manual.

Preparing the SR-88

It is possible to install the kit without removing the circuit board from the casing. The SR-88 I worked on and is used in this manual had a lot of issues before I could install the kit so on some of the pictures you will only see the circuit board.
On the next page you there is a photo of the bottom of the circuit board with 3 sections of interest marked.

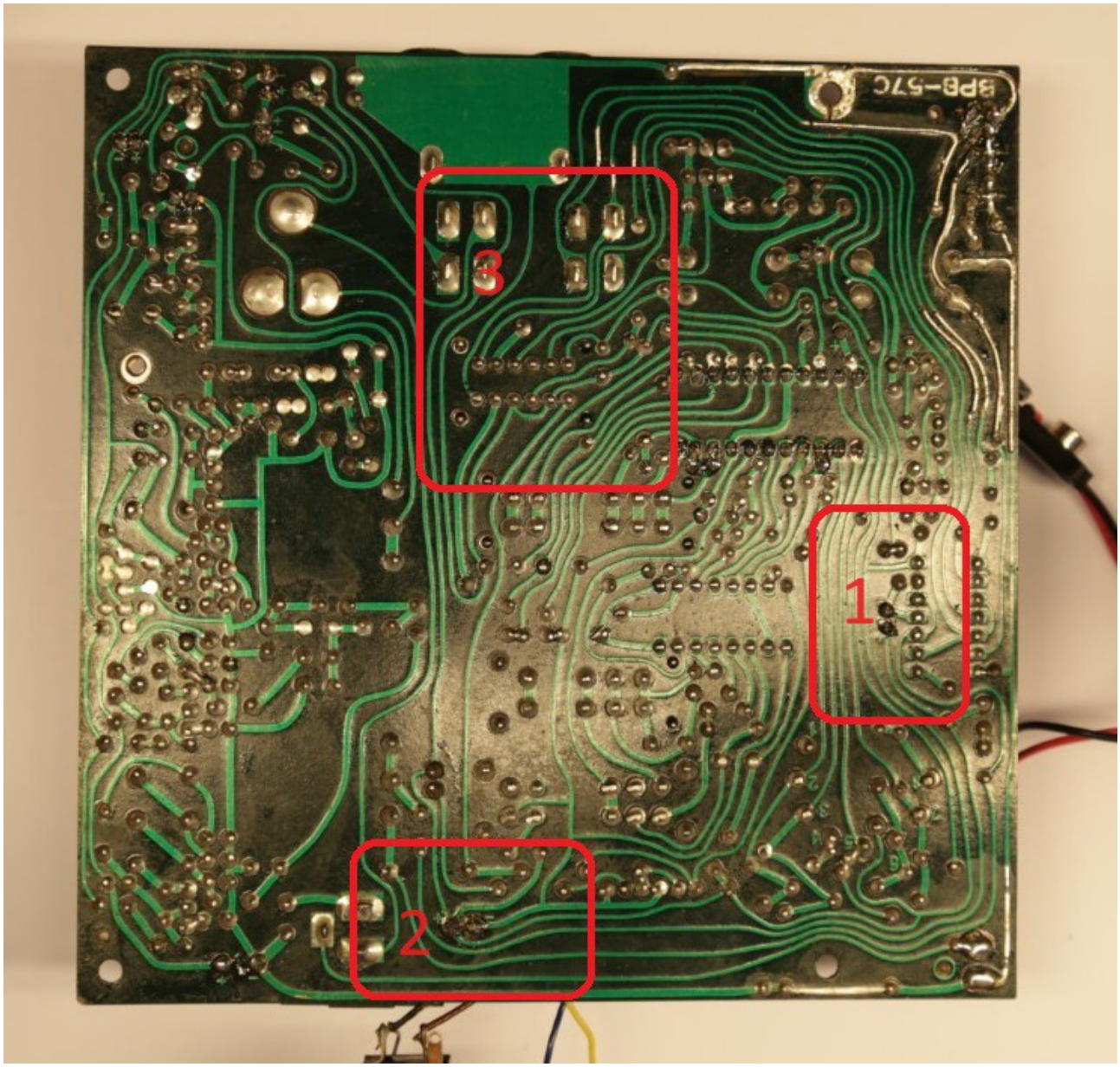
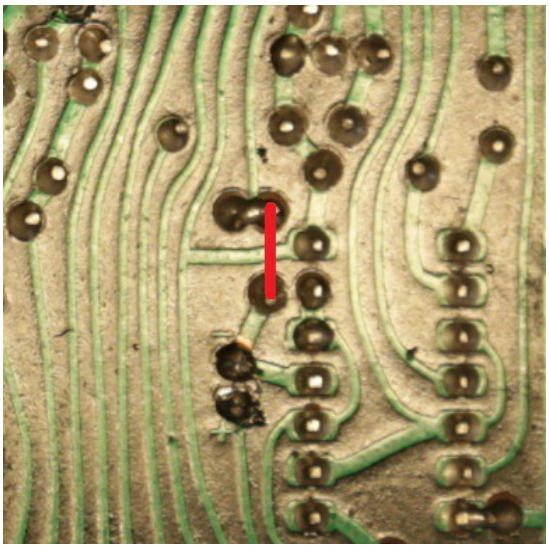


Photo 1, bottom side of the printed circuit board. Audio out en start/stop jack facing towards the back



In section one a jumper needs to be removed, there is a close up of this section in photo 2. A piece of wire is fitted on the parts side of the printed circuit board. The jumper is marked in red in photo 2. On one side of the jumper there are two islands, the island on the upper left side that is not connected to the jumper goes to the clock output jack. Be careful not to de-solder this wire. De-solder the jumper on both sides and remove the jumper. Make sure you remove the jumper from the case or it might short something in the future.

Photo 2, close up of the jumper that needs to be removed

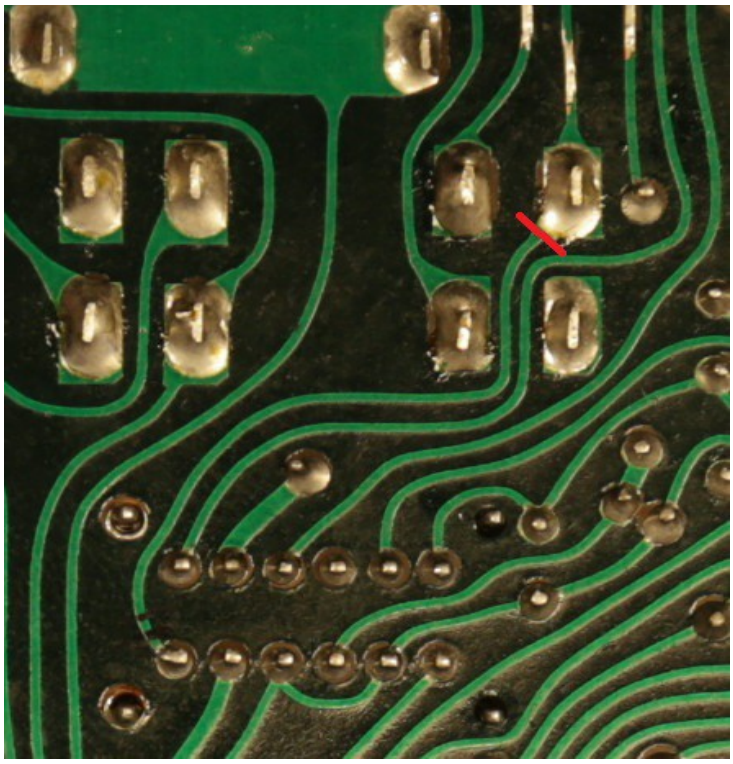


Photo 3, a close up of the start/stop jack and the trace that needs to be cut.

In section three a trace needs to be cut. Use a Dremel or similar tool with an engraving cutter to cut the trace. A sharp knife can also be used but be careful not to cut adjacent traces. See photo 3, the cut is marked with a red stripe. It is between the start/stop jack and the mode switch. Check with the multimeter if the two points are no longer connected.

Installing the kit

In the photo 4 below you can find how the wiring should look like when you are finished. A detailed wiring procedure can be found below.

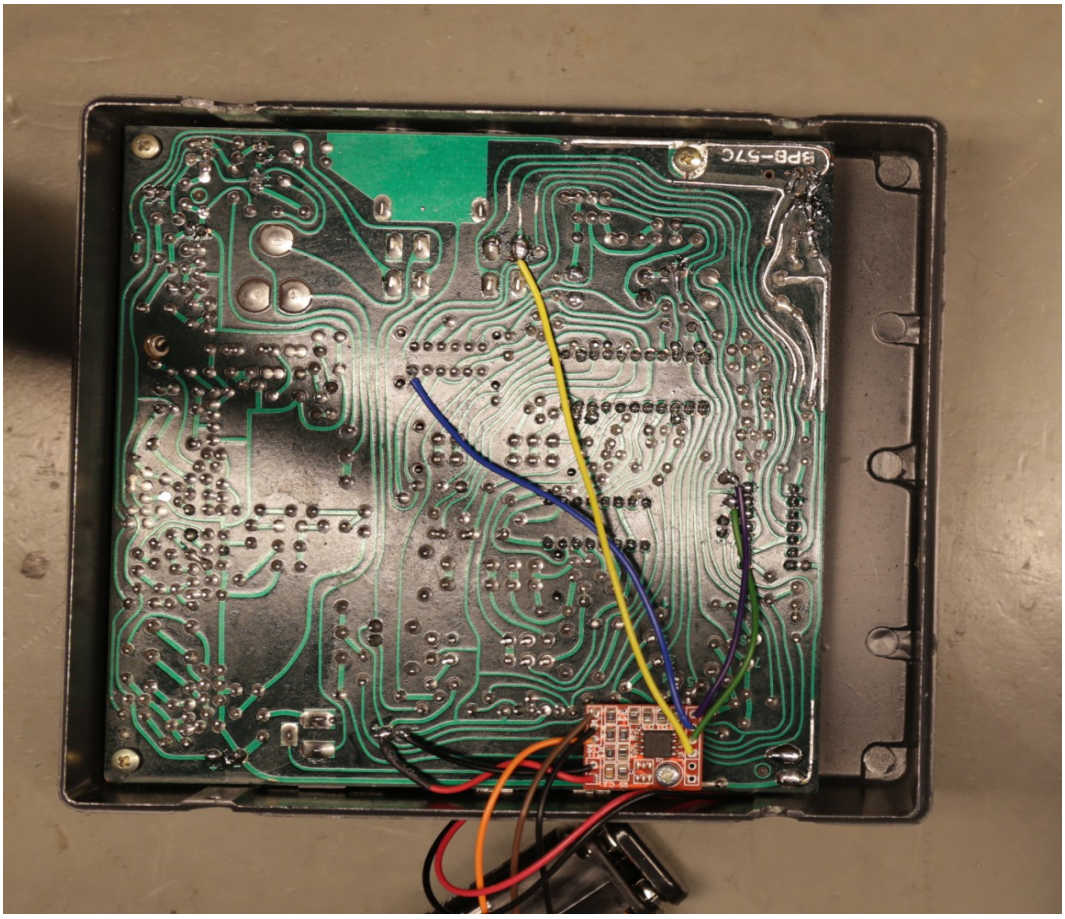


Photo 4, the µSync kit installed.

When the output and start/stop jack are facing away from you, remove the screw in lower right corner. Mount the spacer between the circuit board of the SR-88 and the µSync circuit board. Use the washer between the µSync circuit board and the M2.5 screw. See photo 5.

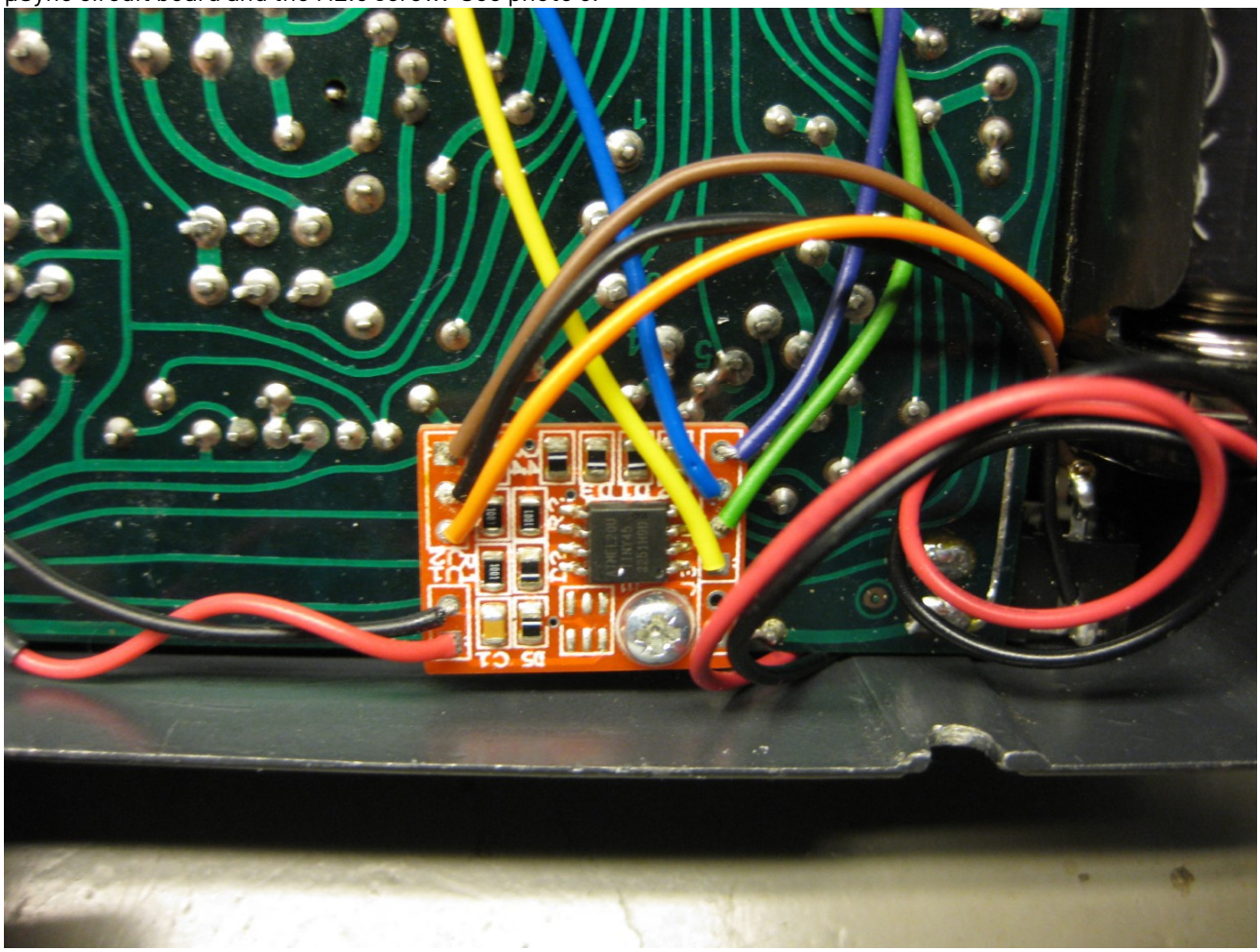


Photo 5, mounting position of the kit.

Install the black and red wire for the power supply as shown in photo 6, make sure that the wires don't short. The position is marked with 2 in photo 1, the overview of the circuit board.

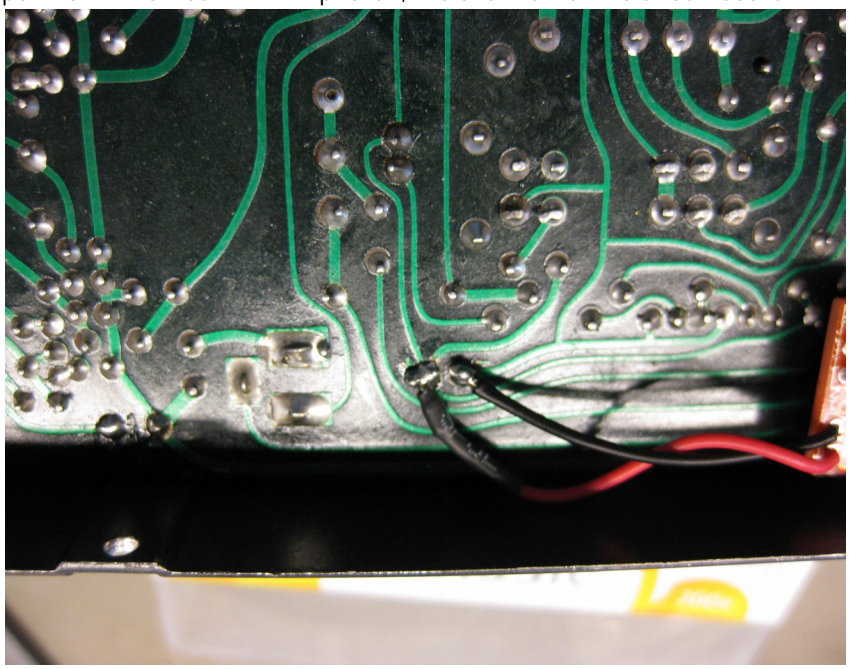


Photo 6, power supply connection .

Install the blue and yellow wire as shown in photo 7.

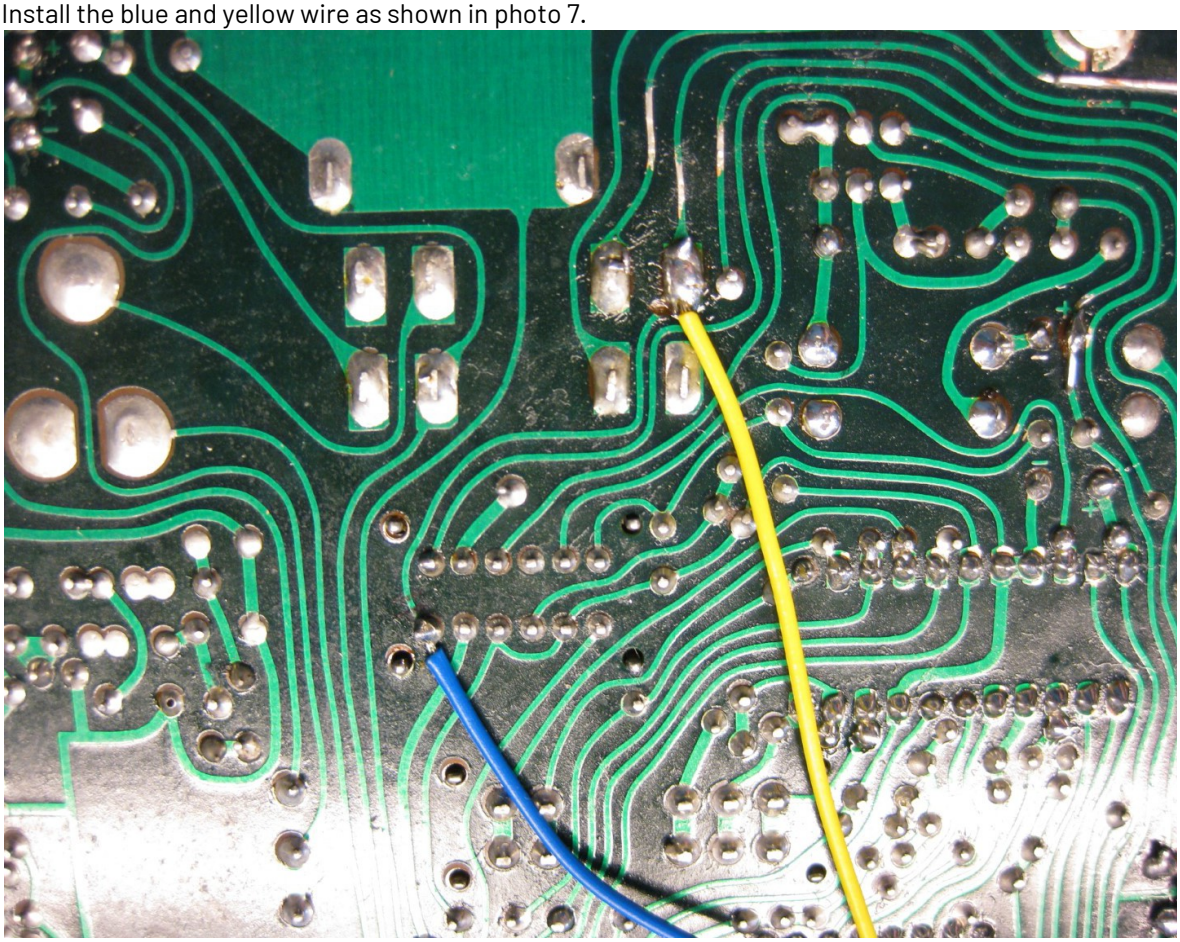


Photo 7, start/stop wiring

Install the green and purple wire as shown in photo 8.

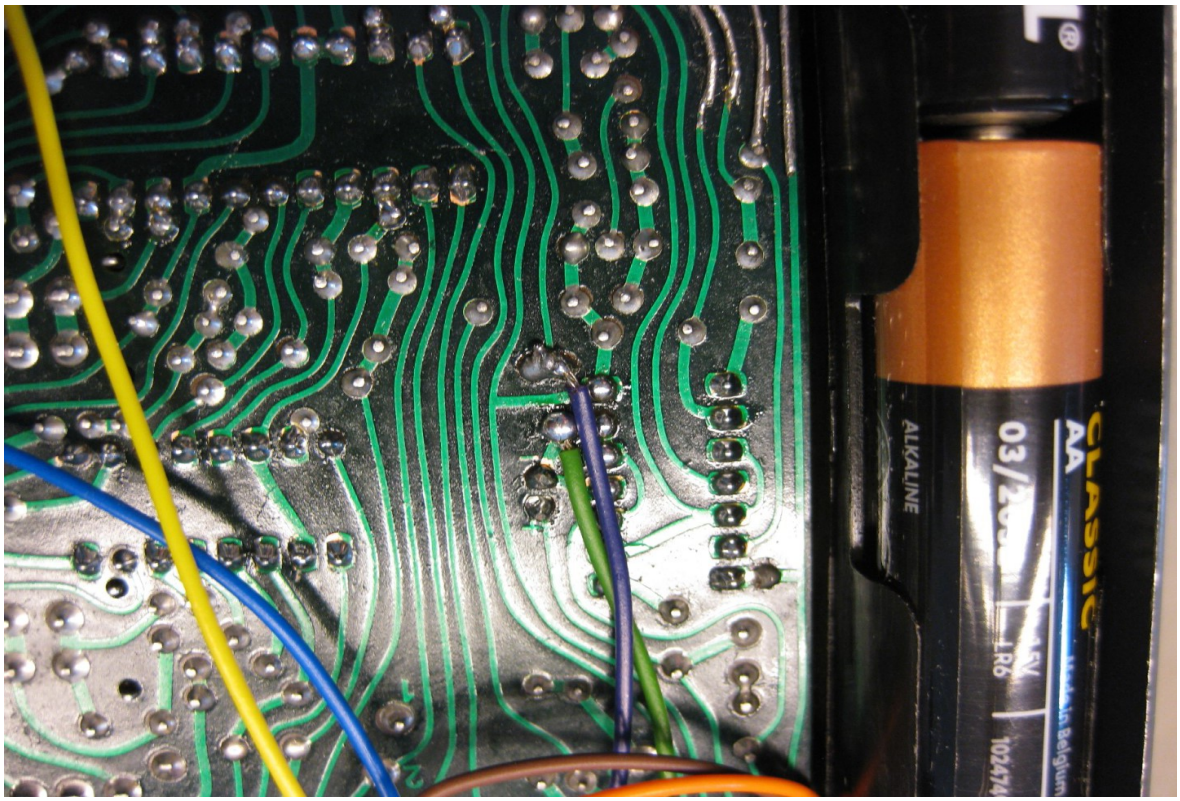


Photo 8, clock wiring.

Put the included heat shrink over the brown and orange wire. Connect the black, brown and orange wire as shown in photo 9. When you use the mini jack from the SR-88, connect the black wire to the sleeve connection of the mini jack. Connect the brown wire to the ring and the orange wire to the tip of the mini-jack. If you decided to use a din socket you need to connect the black wire to pin 2, brown to pin 1 and orange to pin 3.

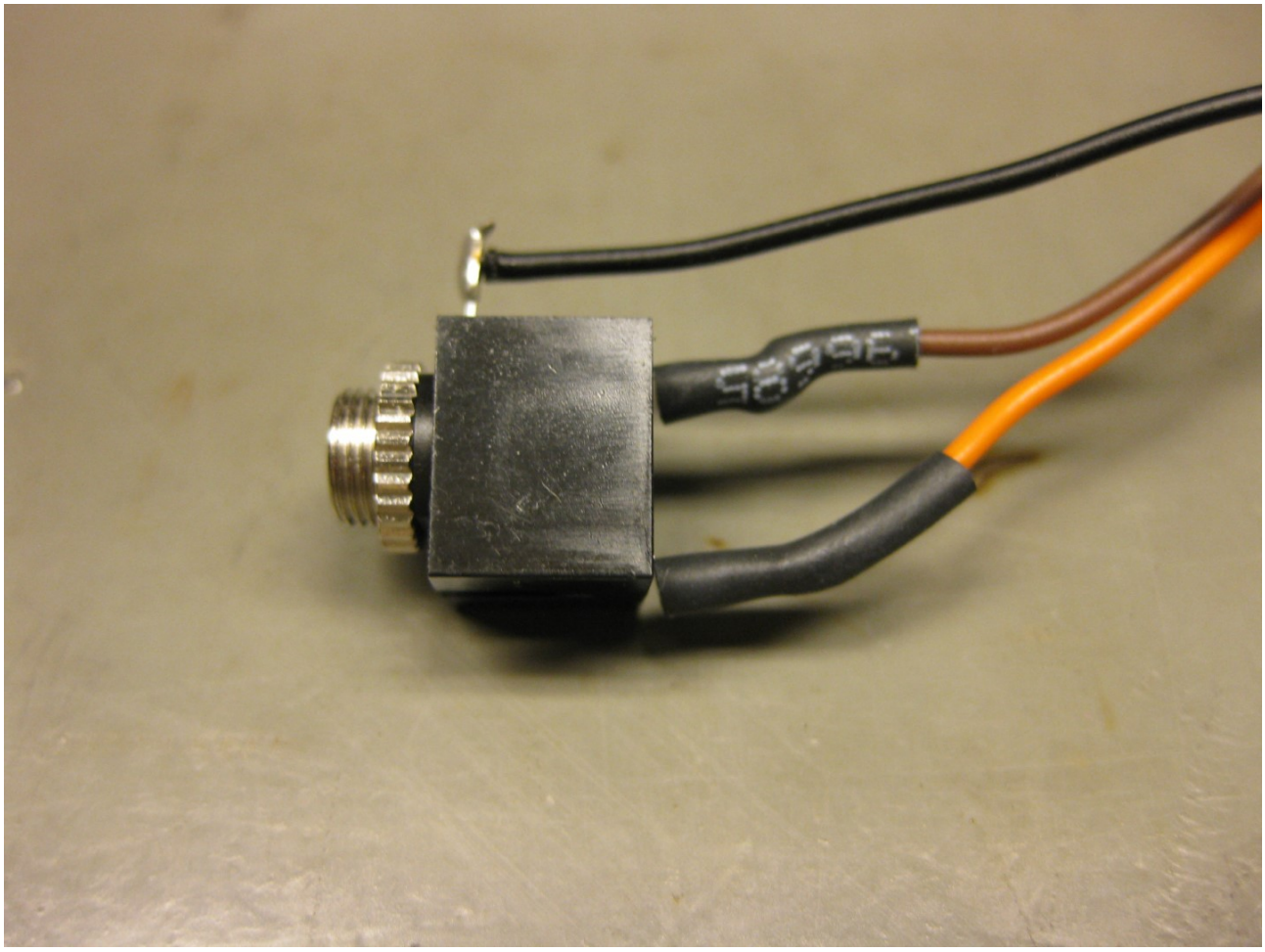


Photo 9, stereo mini jack connections

Test

At this time it is wise to test the SR-88 and check if the installation of the kit was successful. Turn on the SR-88 and check without a sync signal. The SR-88 should behave in the same way as before the installation of the kit. Start and stop a rhythm and change the tempo. If the SR-88 runs OK, stop the SR-88 and connect the mini jack to din cable and a sync cable to din sync source. Test if the SR-88 is running in sync with the master. If you encounter any problems see the trouble shooting section on the next page.

If the test was successful fit the heat shrink over the mini jack connections and crimp them with the heat gun.

Drilling the hole for the mini jack

With the battery compartment on the right hand side a 6mm hole needs to be drilled in the lower right corner of the case. Put some transparent tape on the casing to protect the paint. In photo 10 you can see the position of the jack. Mark out the exact position and use the center punch to make a notch which will guide the drill. Start with a 3mm drill or similar size and drill the hole, next use the 6mm drill. Install the mini jack, fit the batteries and put the 4 screws for the bottom back in place. That's it!

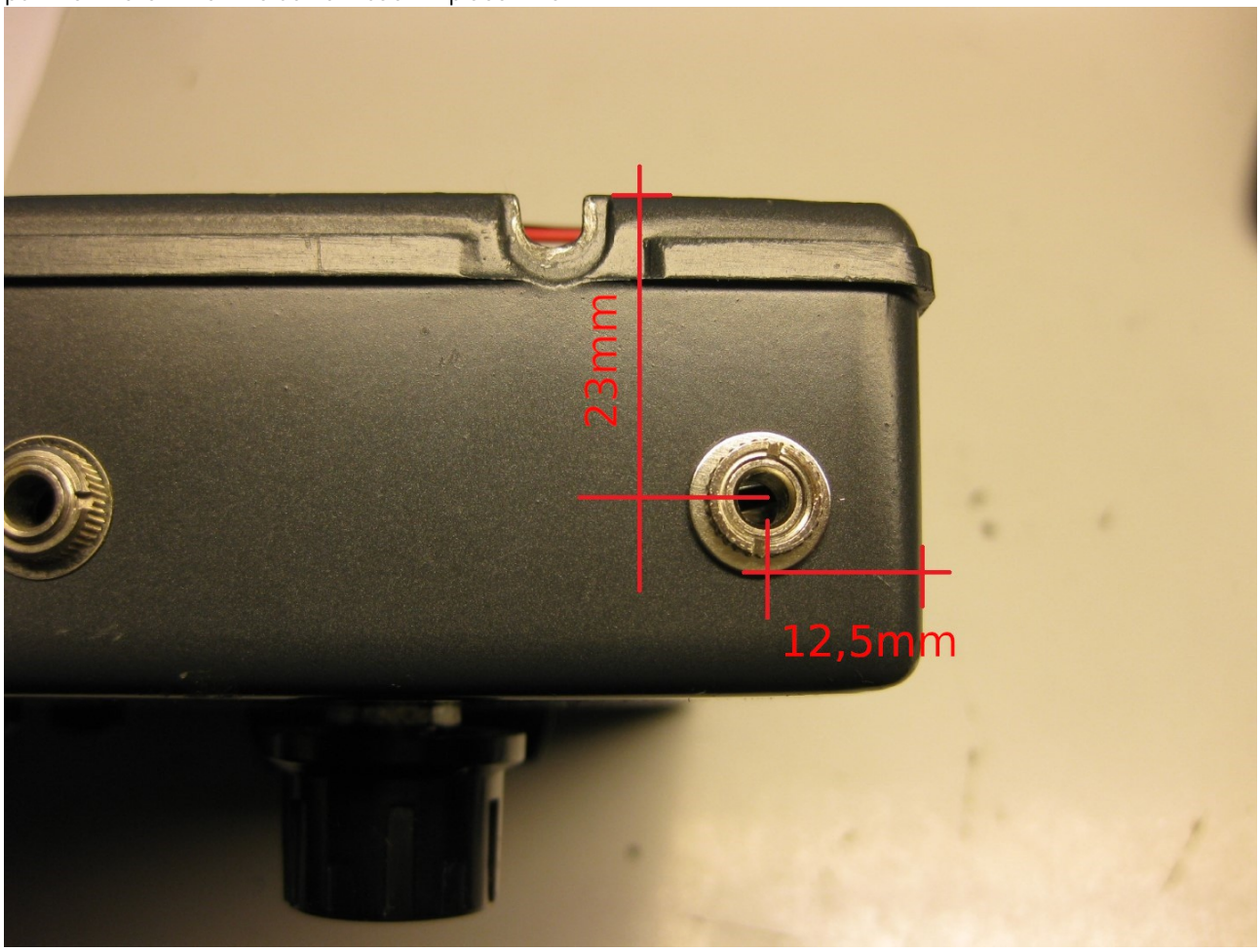


Photo 10, position of the stereo input jack.

Trouble shooting

When the SR-88 is starting and stopping correctly but the din sync input is not behaving as intended check the wiring of the din sync input, when start/stop and clock are swapped the SR-88 will not run. Also make sure that you use a DIN sync cable with pin 1 and 3 are connected, not all cables have these connected because they are intended for midi.

When you encounter timing issues and you use a Roland Tr-606, TR-808 or similar drum machine as master clock make sure the drum machine is in the right scale. Note that the Roland TR-909, TR-707 and TR-727 only have a DIN sync input and can not be used as a DIN sync master. You might also try a different sync source and check if the SR-88 behaves in the same way. If this all does not solve the sync problems, please contact us at support@artefacts.nl with a detailed description of the problem you encounter.